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Cooperative
ECONOMIC INSECT REPORT

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U. S. DEPARTMENT OF AGRICULTURE

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PLANT PEST CONTROL BRANCH

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL BRANCH

ECONOMIC INSECT SURVEY SECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Branch serves as a clearing house and does not assume responsibility for accuracy of the material.

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Economic Insect Survey Section
Plant Pest Control Branch
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Volume 4 December 10, 1954 No. 49

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

CORN EAR WORM infestation and damage estimate to field corn in Indiana in 1954. (page 1059).

A GRAIN MITE (Penthaleus major) causing damage in some small grain fields in north central area of Texas. (page 1059).

WALNUT HUSK FLY found in northern California for first time. (page 1061).

SHEEP BOT FLY taken from eye of boy at Blacksburg, Virginia. (page 1064).

Discovery of WHITE-FRINGED BEETLE and GYPSY MOTH in New Jersey announced. (pages 1065, 1066).

Summary of INSECT CONDITIONS - 1954 - in Delaware (page 1067) and South Dakota (page 1072).

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Reports in this issue are for the week ending December 3, 1954, unless otherwise designated.

WEATHER FOR THE WEEK ENDING DECEMBER 6, 1954

East of the Mississippi River last week was unusually cold for the season. The coldest weather occurred in the Southeast on the 4th when freezing was reported in northern Florida and frost in the central interior portions of the State. In the remainder of the region lowest temperatures were recorded on the 6th when minima fell to subzero levels in many northern sections. Pellston, Mich., reported -10 degrees. The week was also considerably cooler than normal in South Dakota and parts of surrounding states where the ground was snow-covered most of the week, and in central and northern areas west of the Continental Divide. The week was unusually warm in Arizona, New Mexico, and the lower Great Plains until the weekend. On the 4th the maximum temperature reached 89 degrees at Abilene, Texas, and equaled or exceeded 80 degrees in most of the remainder of the State.

In Texas and Oklahoma another rainless week intensified the drought situation, particularly in western Oklahoma and northwestern Texas where the soil moisture was further sapped by soil-blowing winds. Moderate to heavy rains fell in southern Missouri and in Kentucky, Tennessee, and most of the Southeast replenishing soil moisture and water supplies. Showers in Arkansas, Louisiana, and Mississippi were too light and scattered to check the increasing drought conditions there. Heavy snow fell during the passage of a storm from the central Rocky Mountains to the Great Lakes region at the beginning of the period over a belt from South Dakota and northern Nebraska through southern Minnesota, northern Iowa, and southern Wisconsin. On the night of December 3 a low pressure area off Newfoundland was responsible for up to 5 inches of snow over Cape Cod and the southern coast of Massachusetts; an inch remained on the ground at the end of the period at Cape Cod. Another storm moving across the Southern States on the 5th and 6th produced 1 to 4 inches of snow from North Carolina to New Jersey, and some heavier amounts in the mountains; most of this snow also remained on the ground at the end of the period. In northern areas snow cover at the end of the period extended from South Dakota and eastern North Dakota eastward through the Great Lakes, except southern Michigan was bare, with depths generally ranging from 1 to 4 inches. Snow also covered northern and central Pennsylvania, western and northern New York State and northern New England, with extreme depths of about a foot in northern New England. (Summary Supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

A GRAIN MITE (Penthaleus major) - TEXAS - Light to heavy local infestation on wheat, oats and barley in Denton County. Some fields in north central area, especially north of Dallas and Fort Worth, show considerable damage. (Chada). Medium to heavy widespread infestation in Refugio County. (Bredthauer).

YELLOW CLOVER APHID (Myzocallis trifolii) - CALIFORNIA - Found on alfalfa at Newberry in San Bernardino County. Nearest previously reported infestation at Nuevo, Riverside County, 75 miles distance. (Armitage).

Corn Earworm Infestation and Damage Estimate to Field Corn in Indiana - 1954

The corn earworm normally does not overwinter in Indiana north of the Ohio River. However, mild winters and autumns have made it possible for an increasing number to overwinter farther north the past two seasons. A high winter survival coupled with prolonged warm weather during the fall months are two factors which led to heavy infestations and severe damage to dent corn during the past season. Summary of infestations and estimated loss* to field corn due to corn earworm in Indiana in 1954 is as follows: Percent infested 70, percent loss 3.4, loss bu./a. 2.0, loss total bushels 8,984,974, loss estimate $10,332,720. The map (see next page) compares the infestation and damage in 20 representative counties surveyed. (Wilson, Schuder, Gould, Everly).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - FLORIDA - Averaging 3 larvae per square foot of lupine near Leesburg. Thirty percent reduction in stand of eighty acres. Det. L. C. Kuitert. (Helms).

GREENBUG (Toxoptera graminum) - TEXAS - No greenbugs in 29 counties surveyed in north central, central and south Texas. (Chada).

YELLOW SUGARCANE APHID (Sipha flava) - FLORIDA - Some damage to 240 acres of grasses near Davie. (Link).

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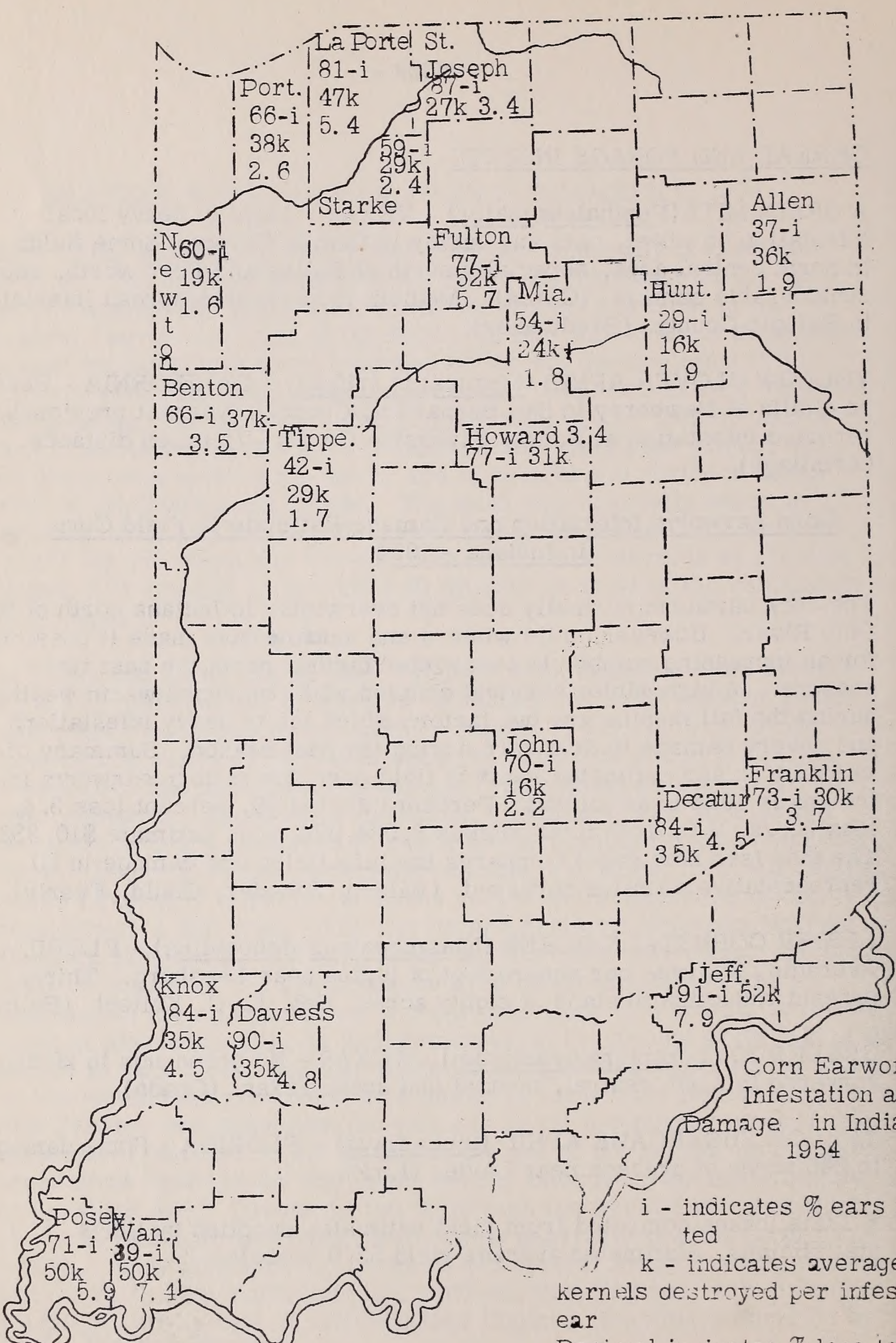
* State losses computed from yield estimates supplied by USDA statisticians. Estimated average yield 53.0 bushels.



Corn Earworm
Infestation and
Damage in Indiana
1954

i - indicates % ears infes
ted

k - indicates average nc.
kernels destroyed per infested
ear

Decimal inuicates % loss to
corn crop

SALT-MARSH CATERPILLAR (Estigmene acrea) - TEXAS - Medium local infestation on grasses in Burleson County. (Burke, Sanchus).

FRUIT INSECTS

Walnut Huskfly Recorded in Northern California: Recently an infestation of walnut huskfly (Rhagoletis completa) has been reported in Sonoma County. This is the first record of the occurrence of this important Persian walnut pest in northern California. For many years it has been of such abundance in southern counties as to require extensive and expensive remedial measures. The present finding comes at a time when the walnut industry is moving its headquarters to the northern part of the State, production being practically crowded out in the south by residential subdivisions. Whereas 80 percent of the producing acreage used to be in southern California, it is now in the north and the Walnut Growers Exchange is in the process of moving their entire processing plant facilities from Los Angeles to Stockton. The reported infestation in Sonoma County was found too late to make an adequate survey this season to determine just how widely it might be distributed. This will be undertaken at the proper time this coming season. However, conditions as reported are such that we are afraid that it may be widespread in that particular area. (Armitage).

SPIDER MITES (prob. Paratetranychus yothersi) - FLORIDA - Average of 1-4 per leaf on avocados in scattered infestations in Dade County. (Moser).

SNOWY TREE CRICKET (Oecanthus niveus) - TEXAS - Evidence of heavy egg deposition in twigs of peach trees in local area of Erath County. (Denman).

OBSCURE SCALE (Chrysomphalus obscurus) - TEXAS - Heavy widespread infestation on pecan trees near Menard. Killing trees. (King).

FALL WEBWORM (Hyphantria cunea) - TEXAS - Had heavy local infestation on pecan trees in Harris County. (Davis).

CARPENTERWORM (Prionoxystus robiniae) - TEXAS - Light to medium local infestation on pecan trees in Harris County. (Randolph).

A WEEVIL (Madarellus undulatus) - PENNSYLVANIA - Found boring in stems of apples Sept. 24 in an orchard in Berks County causing fruit to drop prematurely. Only McIntosh variety affected. Det. by S. W. Frost. (Menusan).

Correction: Vol. 4, No. 48, p. 1041, under A LEAF MINER should read Callisto geminatella.

TRUCK CROP INSECTS

BEET LEAFHOPPER (Circulifer tenellus) - TEXAS - Heavy local infestation on spinach in Dimmit County. The virus disease of spinach thought to be carried by beet leafhopper, though obvious in several fields, not severe yet. (Richardson).

SEED-CORN MAGGOT (Hylemya cilicrura) - TEXAS - Medium local infestation on spinach in Dimmit County. Seedling spinach is being attacked, serious potential damage if insect increases. (Richardson).

CABBAGEWORMS - FLORIDA - Twenty-six cabbage loopers (Trichoplusia ni) collected from 200 plants in each of 10 fields at Sanford, Seminole County, Nov. 29, and 2 imported cabbageworms (Pieris rapae) collected on 200 plants in each of 10 fields Nov. 28. No cabbage webworm or diamondback moth noted. (Wilson). SOUTH CAROLINA - Only light populations at Charleston Nov. 24. (Cuthbert).

TURNIP APHID (Rhopalosiphum pseudobrassicae) - TEXAS - Heavy local infestation on turnips in Brazos County. (Little). FLORIDA - Appearing on turnips in Gadsden County but no damage yet. (May). SOUTH CAROLINA - Very abundant on turnips at Clemson around Nov. 22. (Eleazer). Generally light in cabbage plant beds and in turnip plantings in Charleston area, Nov. 24. (Cuthbert).

CABBAGE APHID (Brevicoryne brassicae) - VIRGINIA - Increasing on fall grown crucifers in Norfolk area. (Morris, Nov. 20). FLORIDA - Infesting 1.75 percent of 200 cabbage plants in each of 10 fields at Sanford, Nov. 24. By Nov. 29, 46 percent infested. (Wilson).

FALL ARMYWORM and CORN EARWORM - FLORIDA - Infesting bell pepper at Immokalee, Collier County. About 10 percent of plants had corn earworm infested fruits in one 30-acre field. (Kelsheimer).

VEGETABLE WEEVIL (*Listroderes costirostris obliquus*) - SOUTH CAROLINA - Adults and larvae causing slight damage to tops of turnips in Charleston area Nov. 24. (Cuthbert).

CUTWORMS - SOUTH CAROLINA - Light to moderate injury on young spinach in Charleston area, Nov. 24. (Cuthbert).

FOREST, ORNAMENTAL and SHADE TREE INSECTS

FALL CANKERWORM (*Alsophila pometaria*) - PENNSYLVANIA - Females abundant and laying eggs in northeastern area, November 24. (Gesell).

PINE TORTOISE SCALE (*Toumeyella numismaticum*) - PENNSYLVANIA - On 5 percent of red pines and 1 percent of Scotch pines in a Christmas tree plantation in Clearfield County. (Adams).

TWO-SPOTTED SPIDER MITE (*Tetranychus bimaculatus*) - PENNSYLVANIA - Causing serious injury on chrysanthemums in greenhouse in Erie County. (Adams).

CHRYSANTHEMUM GALL MIDGE (*Diarthronomyia hypogaea*) - PENNSYLVANIA - Heavy infestation in a greenhouse in Centre County. (Adams).

COTTON INSECTS

A SCUTELLERID (*Sphyrocoris* sp.) - ARIZONA - Reported very numerous on open bolls of wild cotton (*Gossypium thurberi*) in Superstition Mountains, Maricopa County, Oct. 24, and Nov. 14. (Ariz. Coop. Rept.).

INSECTS AFFECTING MAN and ANIMALS

WINTER TICK (Dermacentor albipictus) - OKLAHOMA - Great numbers engorged on horses in Pushmataha County. Many horses almost covered. (Goin).

COMMON CATTLE GRUB (Hypoderma lineatum) - VIRGINIA - Specimens from Dinwiddie County. (Morris, Nov. 26).

SHEEP BOT FLY (Oestrus ovis) - VIRGINIA - Found in the eye of a 6 year old boy in Blacksburg area in early October. All larvae could be removed from the eye. Determination by W. W. Wirth. (Morris).

STORED-PRODUCTS INSECTS

A RICE MOTH (Corcyra cephalonica) - TEXAS - Medium local infestation stored grain sorghum in Calhoun County. (Cooke).

MISCELLANEOUS

OLD HOUSE BORER (Hylotrupes bajulus) - VIRGINIA - Completely destroyed some pine boards in a house in Charlottesville. (Plumb).

BOXELDER BUG (Leptocoris trivittatus) - VIRGINIA - Continuing to cause concern in dwellings in some areas. (Morris, Nov. 26). UTAH - Continues to cause annoyance in homes, offices, and school rooms. (Knowlton).

A STRAWBERRY ROOT WEEVIL (Brachyrhinus rugosostriatus) - VIRGINIA - Found in a house at Gloucester Court House in early November and in a house in Richmond since that time. (Matheny).

A GELECHIID (Dichomeris rustica) - FLORIDA - Average 100 larvae per plant on hairy indigo at Range Cattle Station, Hardee County, in September. Det. J. F. G. Clarke, H. W. Capps. (Hodges).

White-Fringed Beetle and Gypsy Moth Found in New Jersey

The following announcement, dated December 3, 1954, has been released by F. A. Soraci, Chief, Bureau of Entomology, New Jersey Department of Agriculture.

"To the Plant Pest Officials of the Forty-eight States:

Please be advised that infestations of two economically important insects have been discovered in New Jersey recently. During the past summer a sweet potato grower on the outskirts of Vineland, New Jersey, on the northern edge of Cumberland County discovered insect trouble in a field of sweet potatoes. At digging time (about October 1) the potatoes were so badly tunneled that they were considered by the farmer to be unmarketable. Therefore, he didn't even attempt to dig the crop from that field. The farmer asked his county agent for advice and the agent did submit specimens to the Agricultural Extension Service which in turn forwarded them to the Insect Identification and Parasite Introduction Section of the Agricultural Research Service. We were informed on November 19 by Doctor Popham that the insect had been determined as White-Fringed Beetle, Graphognathus leucoloma and since that time it has been determined that the specimens are of the race imitator, apparently of North Carolina origin. Technicians from the federal White-Fringed Beetle Project have been and are assisting this Department in determining the location and extent of infestation. The federal project is also studying the life history and habits of the insect in this northermost outbreak and a quarantine inspector who has worked in and around this community for some 20 years is currently studying regulatory needs. This Department will be anxious to take eradicative measures against the infestation. There is every indication that such measures are available and applicable. Concurrently in collaboration with the federal White-Fringed Beetle Project we will take any regulatory measures advisable for protection of the New Jersey farms in and around the present outbreak and for those areas in the remainder of this and other States. Likelihood of spread by man is small at this time of year and we are hopeful that the infestation might be considerably reduced, if not eradicated, by the time there is more likelihood of hazardous movement, in the spring and summer of 1955. We shall do everything possible to inform your State and other States as we progress with this problem. (continued on next page)

On November 22 an egg mass of Gypsy Moth was discovered in the northermost tip of the State, within one-half mile of Port Jervis, New York. This area is currently being scouted and the neighboring States of Pennsylvania and New York are also planning to scout in the vicinity to delimit the area of infestation. When the area in New Jersey has been delimited, we shall put down quarantine measures and we shall also plan to eradicate the outbreak as quickly as possible. Again, as the work progresses and regulatory measures are taken, please be sure that you will be notified."

* *

RECENT IMPORTANT INTERCEPTIONS AT PORTS OF ENTRY

The living larva of a curculionid, Palaeopus costicollis Marshall, was intercepted recently in ginger root for propagation in the mails from Jamaica at Washington, D. C. (Gouldman). This insect has been reported injurious to yams (Dioscorea sp.) in Jamaica. Injury is caused by the larvae tunnelling in the roots. It has been intrcepted a number of times at various ports in yams from Jamaica, Trinidad, Cuba, Guadeloupe, Antigua, St. Vincent, Honduras, British Guiana and Venezuela. Six adults of a curculionid, Tychius prob. flavicollis Steph., were intercepted with Lotus sp. seed for propagation in the mails from Turkey also at Washington, D. C. (Gouldman). This weevil has been reported attacking the seed pods of Melilotus sp. in Germany. It is said to occur in parts of Europe, Algeria and Syria. Neither of these two insects is known to occur in the United States. (Compiled by - Plant Quarantine Branch).

SUMMARY OF INSECT CONDITIONS - 1954

DELAWARE

Reported by H. E. Milliron

Corn Insects

EUROPEAN CORN BORER (Pyrausta nubilalis) pupation in Sussex County **from** 0-50 percent by April 15 with first adults emerging about third week, and egg-masses common on volunteer corn by first week in May. Damage to early sweet corn generally heavy in Sussex County in June. Whorls of field corn from Smyrna southward injured in late June and early July. However, losses during season much below preceding year. Fall survey revealed a state-average of only 60 borers per 100 stalks, or more than 50 percent fewer than in 1953; heaviest population and damage occurred in southern and western Sussex County. CORN EARWORM (Heliothis armigera) tassel damage was prevalent from Smyrna southward, beginning about mid-June. Heavy ear infestations in sweet corn throughout July and August in southern area. In general, pest somewhat less abundant than preceding season. A CORN SAP BEETLE (Carpophilus lugubris) adult activity began about July 1 in Sussex County. During remainder of season ear and tassel infestations were found generally, but most frequently throughout southern half of State, especially in sweet corn. Economic importance of this species has increased annually during past several years. GRASS THRIPS (Anaphothrips obscurus) occurred abundantly in mid-June in Kent and northern Sussex Counties, causing a pronounced silvery sheen on the lower leaves. SEED-CORN MAGGOT (Hylemya cilicrura) caused severe losses in late May in Kent and Sussex Counties, necessitating extensive replanting. Adults were exceedingly numerous in weedy margins of infested fields and in cereals. Light BLACK CUTWORM (Agrotis ypsilon) damage was encountered at many locations in Sussex County between May 7 - 20. CORN ROOT APHID (Anuraphis maidi-radicis) was very abundant in lighter soils, causing considerable damage in June. CORN FLEA BEETLE (Chaetocnema pulicaria) during May and June was numerous everywhere and at places in Sussex County again in August. A heavy incidence of bacterial wilt in sweet corn plantings was noted generally. CORN LEAF APHID (Rhopalosiphum maidis) first noted in mid-July, caused widespread injury to tassels and upper leaves in Kent and Sussex Counties. Damage was most severe in past several years. FALL ARMYWORM (Laphygma frugiperda)caused serious damage to whorls and tassels of late corn in August from Townsend southward. Much loss of ears of field corn was noted in September. The degree and extent of injury greatly exceeded that of 1953, being about comparable to that of 1950.

Alfalfa and Clover Insects

ALFALFA WEEVIL (*Hypera postica*) became active early in March, and by mid-April had inflicted severe injury to first-growth alfalfa throughout State; in many instances total loss resulted. Considerable effort was devoted to control operations in Kent County. At some places where satisfactory control was not obtained second growth was greatly retarded. The weevil was the most destructive since its discovery in 1952. PEA APHID (*Macrosiphum pisi*) - Very heavy spring infestations occurred generally on alfalfa and clovers, and persisted until the latter part of April, when a fungus disease became effective in reducing populations 15 or more percent . However, severe damage to the first crop was the most consipicuous since 1952. POTATO LEAFHOPPER (*Empoasca fabae*) was much less abundant than in 1953; no serious effects noted anywhere. GREEN CLOVERWORM (*Plathypena scabra*) was about normal in abundance, except in a few localized areas. MEADOW SPITTLEBUG (*Philaenus leucophthalmus*) hatch began in early April and spittle masses were numerous generally in May, but not unusually so. Losses largely confined to southern Kent and Sussex Counties.

ALFALFA PLANT BUG (*Adelphocoris lineolatus*) was less abundant than in 1953. Known distribution remained as given the previous season. CLOVER LEAF WEEVIL (*Hypera punctata*) heavily injured young stands of red clover during April in the southern half of the State. In general, however, it was somewhat less serious than in 1953. LESSER CLOVER LEAF WEEVIL (*Hypera nigrirostris*) was responsible for a serious reduction of red clover bloom generally. CLOVER APHID (*Anuraphis bakeri*) was very prevalent on red clover in Kent County in April; no perceptible injury was noted. CLOVER LEAFHOPPER (*Aceratagallia sanguinolenta*) was present in injurious numbers in Sussex County in August. Heretofore, not recorded as an economic pest in the State. Unusually large numbers of MEADOW PLANT BUG (*Miris dolabratus*) were encountered in red clover and clover-grass mixtures at many places in Kent and Sussex Counties.

Vegetable Insects
MEXICAN BEAN BEETLE (Epilachna varivestis) was less abundant and destructive generally than for several yrs. BEAN APHID (Aphis fabae) became very numerous in Sussex County, in late July and August, causing considerable retardation. GREEN CLOVERWORM infested lima beans in the southern area in about usual numbers. Some control necessary in Kent County. TWO-SPOTTED SPIDER MITE (Tetranychus bimaculatus) infestations were moderate on snap beans from Frederica to Bridgeville in July, and on lima beans at Blackbird. Many lima bean plantings severely infested with STRAWBERRY SPIDER MITE (Tetranychus atlanticus) in late July and August from Felton southward, resulting in much foliage damage. IMPORTED CABBAGEWORM (Pieris rapae) was abundant generally, but not unusually destructive anywhere. CABBAGE LOOPER (Trichoplusia ni) caused much injury to crucifers generally, and severe damage in extensive seedling beds of late cabbage, broccoli and cauliflower in the Dover - Milton areas.

CABBAGE APHID (Brevicoryne brassicae) was more prevalent than usual on all crucifers throughout the season. An INTRODUCED FLEA BEETLE (Phyllotreta cruciferae) caused severe injury to radish, kale and cabbage from Townsend southward to Georgetown, and later to cauliflower at many locations. HORNED SQUASH BUG and SQUASH BUG (Anasa armigera and A. tristis) - The former, more abundant, was a pest on cucumbers and squash throughout Sussex County; the latter was numerous on pumpkins and squash at some places but not especially destructive. SQUASH BEETLE (Epilachna borealis) was generally less injurious than in 1953. POTATO FLEA BEETLE (Epitrix cucumeris) was a pest primarily on untreated potatoes in home gardens. Population on commercial plantings generally somewhat below preceding season. Tomatoes suffered severe destruction from COLORADO POTATO BEETLE (Leptinotarsa decemlineata) particularly in Kent and Sussex Counties in July and August. Small, neglected plantings of potatoes and eggplant also heavily attacked. TOMATO RUSSET MITE (Vasates lycopersici) occurred in same locations as reported in 1953, but infestations confined to smaller areas and damage lighter. TOBACCO and TOMATO HORNWORMS (Protoparce sexta and P. quinquemaculata) - The former generally present on tomatoes, but less numerous and injurious than in 1953. The latter species caused some defoliation on Primehook Neck, the first record as a pest in the State since 1950.

POTATO LEAFHOPPER was present in conspicuous numbers on limas from Dover southward in June and July. Injurious populations developed on snap beans, and particularly on blackeyed peas in the vicinities of Georgetown and Bridgeville. BLISTER BEETLES (Epicauta spp.) partially defoliated lima beans and tomatoes at several places in Kent and Sussex Counties; about normal numbers. BEAN LEAF BEETLE (Cerotoma trifurcata) adults were very prevalent on all types of beans in May and June throughout southern half of State. ASPARAGUS BEETLES (Crioceris asparagi and C. duodecimpunctata) were normally abundant in April and May; the former made control necessary in numerous plantings in Kent and Sussex Counties. FLOWER THRIPS (Frankliniella tritici)severely damaged potatoes in the Smyrna - Leipsic and Milton areas, and attacked other vegetable crops, such as beans and seedling crucifers. Pest more destructive than at any time during the past several years. SWEET-POTATO FLEA BEETLE (Chaetocnema confinis) caused heavy damage to young plantings in Sussex County. GARDEN FLEAHOPPER (Halticus bracteatus) occurred commonly on potatoes and tomatoes, but injury light in most cases. EUROPEAN EARWIG (Forficula auricularia) - Two females captured in mid-summer at Newark. This is a new State record. SPOTTED and STRIPED CUCUMBER BEETLES (Diabrotica undecimpunctata howardi and Acalymma vittata) - The first species was less abundant and troublesome generally than in 1953; the second was present in about the usual numbers.

Soybean Pests

Severe infestations of STRAWBERRY SPIDER MITE at numerous places in Sussex County were responsible for heavy leaf-droppage and yellowing of the foliage. BEAN LEAF BEETLE defoliated new plantings near Farmington in June. GREEN CLOVERWORM was a very active foliage feeder throughout State. Moderately heavy injury reported in Milford - Primehook Neck area in August. GRASSHOPPERS (Melanoplus spp.) present generally throughout season in about normal numbers. JAPANESE BEETLE (Popillia japonica) caused usual amount of damage at some locations in Sussex County, but was less abundant elsewhere than preceding season.

Fruit Pests

PLUM CURCULIO (Conotrachelus nenuphar) damage to peaches less than in past several years. CODLING MOTH (Carpocapsa pomonella) first and second broods were about normal, but a third brood was troublesome during August - September in certain apple plantings in Kent County. APPLE and ROSY APPLE APHIDS (Aphis pomi and Anuraphis roseus) - The usual population of both species was present until the first week of June when a state-wide outbreak occurred, which warranted control in several orchards. EUROPEAN RED and TWO-SPOTTED SPIDER MITES (Metatetranychus ulmi and Tetranychus bimaculatus) increased on apples and peaches during June, July and August, but were not as numerous or as injurious as in preceding season. RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) and ORIENTAL FRUIT MOTH (Grapholitha molesta) presented no problems except that larvae of latter species were common in apples in a Kent County orchard in late September.

Ornamental,Forest and Shade Tree Insects

MIMOSA WEBWORM (Homadaula albizziae) was not more abundant or destructive on mimosa trees than in 1953, and much less so than in 1950-52. During the past few years, apparently this pest has shown an increasing preference for honey locust, which suffered a severe attack this season. A JAPANESE WEEVIL (Pseudocneorhinus bifasciatus) infested forsythia at Bridgeville in July; previously, known only from Seaford. Several heavy infestations of SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) found from Smyrna southward to Bridgeville, all associated with dead or dying elms, some of which had been attacked in previous seasons. The distribution of the pest is now regarded as state-wide. An ASIATIC OAK WEEVIL (Cyrtepistomus castaneus) caused conspicuous damage to numerous oaks in New Castle and Kent Counties in July. YELLOW -NECKED CATERPILLAR (Datana ministra) defoliated basswood in the area north of Dover. WOOLLY ELM APHID (Eriosoma americanum) was common on American elm in June. ELM LEAF BEETLE (Galerucella xanthomelaena)was very abundant and destructive on elms over entire State, especially southern half. Very little control was attempted. JAPANESE BEETLE generally less common than in 1953. Most severe damage to elms from Dover southward. SYCAMORE LACE BUG (Corythucha ciliata) - The usual heavy infestation throughout the State was apparent.

BAGWORM (*Thyridopteryx ephemeraeformis*) damage was less than in 1953, and confined largely to black locust, sycamore and various conifers. WHITE-MARKED TUSSOCK MOTH (*Hemerocampa leucostigma*) was somewhat more abundant than in recent previous years, causing only light defoliation. Found commonly on sycamores at several places in the vicinity of Smyrna. A PINE SAWFLY (*Neodiprion americanus americanus*) was especially destructive on red pine in the Redden State Forest, and elsewhere. WEBWORMS (*Salebria afflictella* and *Tetralopha melanogrammos*) - Severe state-wide outbreaks of both species occurred on sweet gum, producing a scorched appearance. EASTERN TENT CATERPILLAR (*Malacosoma americanum*) was normally abundant.

9 SUMMARY OF INSECT CONDITIONS - 1954

SOUTH DAKOTA

Reported by J. Lofgren

Field Crop Insects

The first ARMYWORM (*Pseudaletia unifuncta*) infestations were reported July 5. In the following 3 or 4 weeks economic infestations were found in 29 counties. Most damage was to oats with some injury to barley, wheat, corn, and flax. By end of July damage subsided with larvae pupating. Moths were numerous during August but no outbreaks followed. Losses from armyworms was estimated at approximately $190,000 and approximately 13,000 acres were treated for armyworm control. BLACK CUTWORMS (*Agrotis ypsilon*) caused severe damage to a few late-planted corn fields in low areas in southeast counties. The EUROPEAN CORN BORER (*Pyrausta nubilalis*) early spring surveys indicated a winter survival of approximately 80 percent. Egg laying conditions were favorable and generally heavy first brood infestations developed. Eggs hatched during first part of July and shot hole injury was generally evident by July 10. Pupation started first of August and reached 50 percent in southeast counties by August 14. Some eggs were hatched by mid-August. The second brood did not develop as severely as anticipated except in southeast counties and a small area in the northeastern part of State. Fall survey indicates average of 402.1 borers per 100 plants for counties surveyed. Highest average infestation was 1,123 borers per 100 plants in Yankton County.

GRASSHOPPERS - By first week in June a good hatch of Melanoplus bivittatus had occurred. M. mexicanus eggs were starting to hatch by June 15. Weather up until this time had been cool and unfavorable for egg development. After hatch started, however, weather conditions in most areas were very favorable for grasshopper development. This plus other factors resulted in a general state-wide build up of infestations. By end of July there were economic infestations in crop land areas in central and some western counties and local scattered light to severe infestations in legumes and field margins in eastern counties. In addition a range infestation, mainly Camnula pellucida, developed in a small area in the Black Hills. Conditions were generally favorable for egg deposition. The egg survey confirmed adult survey ratings in most cases. In some small areas egg survey indicated lower ratings than those of adult survey. Losses due to grasshoppers in 1954 were approximately $450,000 and there were approximately 31,000 acres treated for grasshopper control. CORN EARWORM (Heliothis armigera) incidence was very high in 1954. In some fields practically 100 percent of the ears were infested.

Legume Insects

ALFALFA WEEVIL (Hypera postica) infestations were not as heavy as in 1953. Larvae were generally present in western counties by first week of June with injury evident in untreated fields. Acreage of alfalfa receiving early spring treatment for adult control increased greatly over 1953. This pest is present in economic numbers as far east as Cottonwood in Jackson County, south to the southern edge of Fall River County and north well into Butte County.

BLISTER BEETLES caused some local injury to alfalfa in most sections of the State. Most prevalent species was Epicauta pennsylvanica. LEAFHOPPERS - Clover leafhoppers were abundant in alfalfa throughout State. Potato leafhoppers were first taken May 27 in southern counties. Most severe injury was observed in western counties where drought combined with leafhoppers to seriously reduce the second hay crop. There were high populations of PEA APHIDS (Macrosiphum pisi) in alfalfa up until mid-July. Infestations decreased with hot, dry weather. Aphids were not numerous enough in 1954 to cause noticeable injury to alfalfa. SWEETCLOVER WEEVIL (Sitona cylindricollis) was not as numerous in 1954 as in previous years. There was some early season damage to sweet clover seedlings in eastern counties.

FLEA BEETLES -- Most severe damage to second growth alfalfa was occasioned by the striped flea beetle in southwestern South Dakota. Average populations of 8 per sweep in some fields. Soybeans, especially late planted fields, were injured by GARDEN WEBWORM (Loxostege similalis) in southeast counties. Some alfalfa was infested but no serious injury reported. Moths were very abundant throughout eastern counties about July 25. LYGUS BUGS were not as abundant as in previous years. Highest average infestations observed were about 7 per sweep. First nymphs were obtained by first of June. ALFALFA PLANT BUGS were generally less numerous than Lygus except in local areas.

Vegetable Crop Pests

The usual garden insects were present in damaging numbers in 1954. Aphids, striped cucumber beetles, flea beetles, imported cabbageworms, cabbage loopers, European corn borers and corn earworms were the most troublesome.

Pests of Shade Trees and Ornamentals

SPIDER MITES were very damaging throughout the state on many different hosts. Evergreens, mainly spruce and junipers, were sometimes damaged severely. SPRING CANKERWORMS defoliated trees, mainly American elm and apple, in several sections. Most severe damage was along the Missouri River in southeast counties and along creeks in western counties. PINE NEEDLE SCALE (Phenacaspis pinifoliae) infestations were very troublesome especially on spruce.

Insects of Man and Animals

MOSQUITOES and BLACK FLIES were very troublesome early in the spring but annoyance decreased rapidly with warm dry weather in most sections. CATTLE LOUSE infestations built up rapidly in October and many untreated herds became heavily infested. HORN FLY (Siphona irritans) and STABLE FLY (Stomoxys calcitrans) numbers were about average during the summer. Stable flies decreased during the hot dry summer weather. HOUSE FLIES were more troublesome than usual especially late in the season. There is evidence of increasing incidence of resistance to chlorinated hydrocarbon insecticides in many areas.

Fruit Pests

APPLE MAGGOT (Rhagoletis pomonella) was, in most areas, the most important fruit pest. The fruit from many small home or farm orchards was almost 100 percent infested. CODLING MOTH (Carpocapsa pomonella) was present in about normal numbers. OYSTERSHELL SCALE (Lepidosaphes ulmi) infestations are heavy on many untreated trees. PLUM CURCULIO (Conotrachelus nenuphar) damage to apples is usually severe in South Dakota and these pests were generally injurious in 1954. PLUM GOUGER (Anthonomus scutellaris) was one of the most important pests of plum during the year and a high incidence of PLUM TREE BORERS was evident.

Stored Grain Pests

There is evidently an increase in GRANARY WEEVIL (Sitophilus granarius) infestations in some counties, especially in central and western areas. Much old grain stored on farms is infested with Indian meal moth, cadelle, and various "branbugs" mainly saw-tooth beetles, flat grain beetles, hairy fungus beetles and foreign grain beetles. There have been many inquiries from housewives about the control of flour beetles, mainly Tribolium confusum, in home stored foods.